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The Control of
GREEN FOXTAIL
IN
ALBERTA

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GREEN FOXTAIL

(Setaria viridis)

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IDENTIFICATION

Green foxtail, often called wild millet or pigeon grass is an annual grass weed which resembles millet. Like all annual plants, it reproduces from seed. The seedlings are erect and the first leaf broadly awl shaped. Stems branch from the base of the plant and may grow from a few inches to two or three feet tall. The leaves are hairless, rough, flat, long, fairly broad from the base to the middle and taper to a fine point at the tip. The seed head is green, cylindrical and very bristly, resembling a small bottle brush. It may be from one to four inches long depending on the growing conditions.

The seed with its hard hull is about 1/12 of an inch long. Its color is yellow, grey-brown or purplish depending on the degree of ripeness. The kernel is greenish-white and is convex on one side and flat on the other.

SEED GERMINATION

The seed is short lived, remaining viable in the soil for about 3 years. Most of the seeds germinate the year following their production particularly from the top inch of soil. If the seed is buried over 3 inches deep it does not readily germinate. Germination usually occurs between the latter half of May and early June, but in southern Alberta it may start earlier. Seeds of green foxtail germinate and the young plants flourish under warm temperatures and good surface moisture.

DISTRIBUTION

Green foxtail is a problem throughout the north-central, central and southern portion of the province and is becoming more widespread.

Generally, the weed is more prevalent on light sandy soils and in crops grown on stubble land. In areas where this weed is present it usually becomes a problem when continuous cropping of cereal grains is practised.

CONTROL OF GREEN FOXTAIL

Cultural Control:

(a) **Cropping Practices**—Green foxtail competes poorly with perennial grasses and legumes. Seeding infested areas with forage crops will give good control of the weed. The forage crop should be left down for at least 3 years but preferably 4 or 5 years to allow green foxtail seeds to rot before the land is broken. **Any regrowth during this time should not be allowed to go to seed.**

Since seeds germinate towards the end of May and since early well-established cereal grains will compete effectively with green foxtail, **early seeding** is preferable. It is important to get the crop to a good start and to maintain a vigorous stand of grain. To ensure maximum competition from an early crop prepare a good, firm seedbed, seed at slightly heavier rates than normal into moist soil, pack to hasten germination, and use fertilizer where recommended. Harrowing before the crop has emerged will kill many foxtail seedlings. A light-weight harrow may be used at speeds not greater than 3-4 miles per hour after the crop has emerged. Mowing infested areas before the plants set seed will help to keep the weed from spreading.

(b) **Cultivation and summerfallow**—Fall or early spring cultivation of land in which a crop is to be planted may be of doubtful value since the seed of green foxtail germinates most readily in late spring and when on or near the soil surface. A shallow tillage in late May will usually encourage germination. **All tillages should be shallow so that the seeds are kept near the surface to germinate well.** The deepest tillage should be carried out with the first operation in the spring. Later cultivations should be shallower to avoid bringing more seeds to the surface.

In land to be summerfallowed, very light fall tillage or early spring tillage will place the seed in a position to germinate readily.

Chemical Control:

TCA and **dalapon** can be used selectively to control green foxtail in certain crops. They must be applied when the weed is in the 1- to 2-leaf stage. The herbicide should be used in 10-15 gallons of water per acre to ensure good weed control and least injury to crops.

Recommendations for specific crops are as follows:

Oats and barley (not wheat)—Apply **TCA** at 1 or 2 pounds active ingredient per acre when the crop is in the 2- to 3-leaf stage and the weed is in the 1- to 2-leaf stage. Use the lower rate (1 pound) on light sandy soils. Some delay in maturity of the crop may occur but usually this will not reduce yields.

If susceptible broadleaved weeds are present, add **MCPA** amine at 6-8 ounces per acre to the **TCA** solution.

Flax — Use **TCA** at 4 to 6 pounds per acre or **dalapon** at $\frac{3}{4}$ to $1\frac{1}{4}$ pounds per acre when the flax is 4 to 6 inches. **MCPA** amine may be added at the recommended rate to control susceptible broadleaved weeds.

Rape—Use **TCA** at 4 to 6 pounds per acre or **dalapon** at $\frac{3}{4}$ to $1\frac{1}{4}$ pounds per acre when the rape plants are in the 2- to 4-leaf stage.

Caution: Rape is very sensitive even to trace amounts of **2,4-D**, **MCPA** or related compounds. Sprayers in which these herbicides have been used should be thoroughly cleaned before applying **TCA** or **dalapon** on rape. Rinse thoroughly with water containing household ammonia or detergent.

Field Peas—(not canning peas)—Apply **TCA** at 4 to 6 pounds per acre. Spray when the peas are 4 to 6 inches high. If susceptible broad-leaved weeds are present **MCPA** amine (4 to 5 ounces acid per acre) or **MCPA** sodium salt (5 to 6 ounces acid per acre) or **MCPB** may be mixed with **TCA** to control these species in addition to the green foxtail.

Sugar Beets—Post-emergence treatment with **TCA** at 4 to 6 pounds per acre or **dalapon** at $\frac{3}{4}$ to $1\frac{1}{4}$ pounds per acre can be used to control green foxtail when sugar beets are in the 2- to 4-leaf stage.

COMMENTS ON EFFECTIVE USE OF TCA AND DALAPON

1. The sprayer should be properly calibrated to provide correct delivery of amount of herbicide.
2. These chemicals must be completely dissolved in water before spraying. The solution should be circulated in the tank 10-15 minutes prior to spraying.
3. Any solution remaining in the tank after spraying should be removed immediately.
4. Amine formulation of **2,4-D** or **MCPA** is suggested when mixing with **TCA**. If the ester formulation is used, it should be mixed **very thoroughly** and **applied immediately**.

ALWAYS READ AND FOLLOW LABEL RECOMMENDATIONS WHEN USING CHEMICALS

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